

Analysing the Development of Small-Scale Forestry in Central and Eastern Europe

Maria Nijnik · Albert Nijnik · Livia Bizikova

Accepted: 5 March 2009 / Published online: 17 March 2009
© Steve Harrison, John Herbohn 2009

Abstract The current state and future prospects and challenges of small-scale forestry in Czech Republic, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia and Ukraine are examined, and Q-methodology for stakeholder evaluation of forest sustainability and pro-market reforms is applied to an example from Ukraine. Small-scale forestry already provides multiple benefits to the countries in transition. However, these countries differ according to the maturity of the reforms, and the continuing process of transition is being delayed in some of them due to institutional weaknesses, e.g. the authority of government with insufficient involvement of rural communities in decision-making. The necessity of linking international and national sustainable forestry policy to management practices at a local level is especially evident in the countries where bottom-up small-scale adaptive forestry is only starting to catch up with the top-down sustainable forest management principles. The paper highlights the necessity of reconciliation of scientific and conventional knowledge for delivering sustainability objectives to small-scale forestry at a local level. It demonstrates that the social and economic pillars of sustainable forestry reform are of a particular importance for successful performance of small-scale forestry in the countries in transition, as is active involvement of stakeholders and local communities in decision-making and policy implementation.

M. Nijnik (✉)

Socio-Economic Research Group, The Macaulay Land Use Research Institute, Craigiebuckler, Aberdeen AB15 8QH, Scotland, UK
e-mail: m.nijnik@macaulay.ac.uk

A. Nijnik

Environmental Network Limited, The Hillock, Tarland, Aboyne AB34 4TJ, Scotland, UK

L. Bizikova

Slovak Academy of Sciences, The Institute for Forecasting, Sancova 56, 811 05 Bratislava, Slovakia

Keywords Sustainability · Adaptive forestry · Transitional economy · Public involvement

Introduction

Changes in wooded cover are one of the most widely perceived impacts of changes in land use (e.g. from meadow to forest) and changes within a land use (e.g. from forest plantation to native woodland). The European Commission (EC 1999) highlighted the importance of fostering constructive changes in rural areas, to reduce negative impacts on the environment and to enhance societal benefits of the agriculture and forestry sectors. It considers an improved understanding by end-users of the outcomes of woodland development in landscapes among the priorities of land use policy. Through people's realization of the changes in wooded cover and by providing local communities with opportunities to evaluate and influence these changes, an improved quality of life in remote rural areas could be attained. It is therefore important to increase the common knowledge of sustainable forestry (SF), to learn more about sustainable development (SD) of small-scale adaptive forestry, and to understand better the cause-and-effect relationships of biological and social systems. In this way an actionary rather than a reactionary basis for more informed decisions at local and regional levels can be achieved (Lessard 1998; Berkes et al. 2003).

The relationships between the welfare of local communities and multiple landscape components and functions—such as small-scale woodlands, biodiversity, cultural heritage, amenity and sustainable production—needs to be addressed to support sound stewardship in rural areas. The role of forestry for local economies and environments depends on the demands for forests and their multiple products and values that reflect a particular situation, at a particular time, in a particular country. The contribution of the geographic context of wooded cover and specific forest features to the countryside is considered essential, as is the development of new forms of governance to aid in the deliberation of options for sustainable forest management (SFM).

The performance of small-scale forestry (SSF) in a transitional economy of Central and Eastern Europe (CEE) depends on institutional transformation, and changes that are taking place in the countryside have contributed to a fresh consideration of the role of institutions involved in the process of transition. This paper therefore addresses the following research questions:

- (1) How has the process of transition enhanced the development of SSF in CEE, and how does the course of action transform traditional (timber production) management into multifunctional forestry practices across the analysed countries?
- (2) Which institutional changes translate SSF objectives to management practices at a local level, and how do these changes in institutions match SFM targets?
- (3) Which institutional capabilities are needed to strengthen the path towards SFM, and how can they be developed?

- (4) What are the prevailing stakeholder attitudes towards pro-market reforms and to SFM?
- (5) How can an increased stakeholder involvement in decision-making in SSF contribute to the advance of sustainable forestry in CEE?

There is a general consensus that the objective of an economic system transformation in transition countries is the creation of an effective market-oriented economy capable of providing sustainable use of multiple ecosystem services and improving human well-being (Nijnik and Oskam 2004). This requires a holistic and participatory vision of new policies and strategies, adequate changes in institutions, and moving away from old sets of norms, rules and mental models (Benhnam et al. 1995). Institutions are the conventions, norms and rules of a society which provide expectations and stability and coordination, regularise life, and produce and protect values and interests (Scott 1995). The transition taking place in CEE includes the alteration of existing institutions in shaping human-environment interactions, with outcomes that allow an elaboration of measures to assist in guiding small-scale forestry towards sustainability.

This paper presents an overview of SSF in CEE including its prospects and challenges in a transitional period. The analysis is based on the authors' previous work and literature review. The tenure rights of existing groups of SSF owners are then examined, as well as the capabilities and practices applied to SSF in CEE. The Q-methodology for stakeholder evaluation of forestry development and of pro-market reforms in forestry is applied to an example from Ukraine. Finally, the main prospects and challenges of SSF in CEE are explored, with particular attention to the role of public participation and new forms of governance in strengthening the forestry paths towards sustainability.

Small-Scale Forestry in the Transition Countries of Central and Eastern Europe

Forest ownership patterns have been changing in Europe since the 1990s through a decreasing number of public forests and an increasing number of private holdings (MCPFE 2007). In the analysed CEE countries, forest resources and forestry industries were publicly owned and managed by government for more than four decades (although the duration varies across countries). With the transition to a market economy, the restitution of forestland to former owners and its privatization began, and in the majority of new EU member states these processes are now almost completed. Nowadays, forestland tenure includes private forestry, along with public and other forests, as this is summarized in Table 1 for the selected countries.

There are large differences across the analysed countries reflecting the level of their institutional development. In general, the number of private forest holdings of less than 10 ha continues to grow, due mainly to continuing restitution, but also to after-inheritance division of forest holdings in some countries (notably Hungary, Slovenia and Lithuania), while a consolidation of forest holdings is being undertaken in some others including the Czech Republic and Slovakia, slowly

Table 1 Share of forestland under state vs. private ownership: several examples from CEE (%)

Ownership type	Czech Republic	Latvia	Lithuania	Poland	Slovakia	Slovenia
State forest	64.7	56	50	82	42.8	39.1
Private	22.1	23	36	16.8	36.9	60.1
Others	13.2	21	14	1.2	20.3	0.1

Sources: Marghescu and Anderson (1997), Sisak and Jarsky (2002), World Bank (2003), Slovak MoA (2004), MCPFE (2007)

reducing the number of small plots (MCPFE 2007). Further changes in forestland ownership are expected, particularly concerning small areas with complicated ownership structures in Slovakia, Czech Republic and Lithuania, and larger areas in Romania (Hirsch et al. 2007). State forest ownership in the analysed countries ranges from 40 to 80%, with an increasing private ownership, varying from 15 to 60% of forestland. About 17% of forestland is owned by cooperative farms, communities and churches. Across the EU countries examined in this paper, non-state owners possess from 150,000 to 1.5 M forest holdings, almost 35% of which belongs to the size classes of less than 5 ha (Table 2).

According to Hirsch et al. (2007), in Europe as a whole, about 75% of private holdings are smaller than 3 ha, accounting for 7% of the area of private forests. In Romania and Poland, almost all private forests are small, and in the Czech Republic roughly 80%. Consequently, because of numerous small holdings and diverse institutional arrangements, the overall cost of forest management is relatively high. In Slovakia, there is a variety of forest ownership and management types, as seen in

Table 2 Private forest area per forest property size class in CEE countries (1000 ha)

Country	Size class (ha)					
	<5	6–10	11–25	26–50	51–100	>100
Czech Republic	161	35	28	19	40	90
Hungary ^c	245	180	120	90	30	25
Latvia ^a	–	–	–	–	–	–
Lithuania ^a	–	155 ^d	–	–	–	–
Poland ^a	1462	–	–	–	–	–
Romania ^b	350	–	–	–	–	–
Slovakia ^a	1.2	4500	–	328	–	535.3
Slovenia ^b	328.3	165.7	138.8	113.4	–	–
Total	2219.2	4880.7	286.8	550.4	70	650.3

^a Data from 1995

^b Data from 1996

^c Data from 1997

^d Area of private forests in property size classes of greater than 25 ha

‘–’ Means that data are not available

Source: Marghescu and Anderson (1997), MCPFE (2007)

Table 3 Dynamics of ownership and management of the forestland in Slovakia (%)

Ownership type	1990 ^a		1995		2002	
	Ownership	Management	Ownership	Management	Ownership	Management
State forest	95.6	95.6	41.7	77.8	42.8	62.3
Cooperative farm	4.3	4.3	–	–	0.1	0.2
Community	– ^b	–	9.0	4.3	9.7	7.7
Private	0.1	0.1	4.5	2.2	12.9	6.1
Groups of private co-owners	–	–	19.2	14.0	24.0	20.6
Churches	–	–	2.5	1.7	3.2	2.1
Allocated for restitution	–	–	23.0	–	7.3	–

^a 1990 represents the base year and it describes the situation during the socialist regime (till late 1989)

^b ‘–’ Means that data are not available

Source: Slovak MoA (2004)

Table 3, and about 60% of private forestland belongs to the estates larger than 100 ha. Private ownership is increasing in Slovakia, but in that country private owners prefer having the state managing their forests. Public ownership still prevails in countries which are not members of the EU, e.g. in Ukraine.

Forest management and present stakeholder involvement in SSF in CEE are primarily built on policies which originated under previous institutional settings and have developed on the basis of former state forest management (Marghescu and Anderson 1997) followed by continuous changes in legislation. The changes in recent laws and regulations related to forestry in the selected countries are presented in Appendix A. They create a wide gap between national strategies and practices at a local level. The performance of SSF in CEE can be improved through a more stable legislative framework, by integration of diverse sectoral policies within the context of sustainable rural development on a spatial (regional) basis and through the involvement in policy development and implementation of many new SSF owners and other local stakeholders (Kouplevatskaya-Yunusova and Buttoud 2007). However, in Slovakia for example, the gap between legislative frameworks and the state of affairs in forestry caused the delays in the consolidation of small fragmented land holdings (planned to be completed by 2005). The process is not yet finalized, primarily because of the shortage of qualified staff at regional offices and the lack of funding to compensate numerous new land owners for consolidating their land that may have different quality (Bizikova and Tubiello 2007). Difficulties with afforestation are observed not only in Slovakia (Hirsch et al. 2007), but as seen in Fig. 1, also in other CEE countries.

The data in Fig. 1 demonstrate the misfit between the policy goals (planned reforestation) and their achievement (i.e. actual practices at a local level) resulting largely from multiple societal and institutional changes (Drgonal and Turnock 2000). Reforestation is a restoration of degraded or recently (20–50 years ago) deforested land. Afforestation is an expansion of forest area on land which more

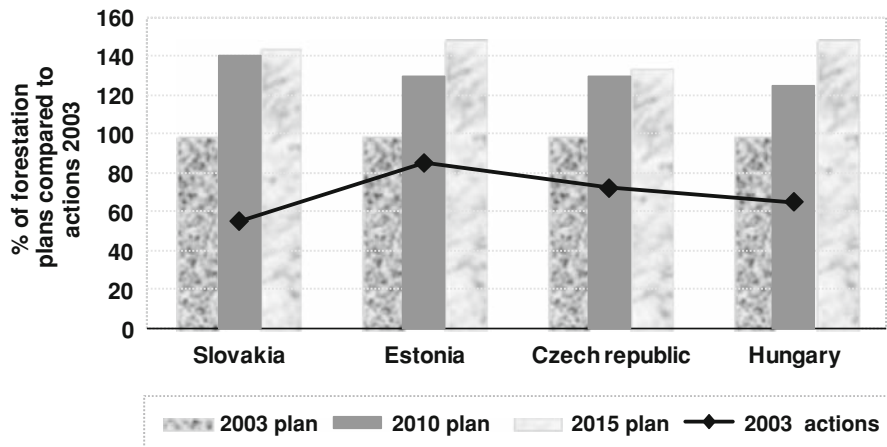


Fig. 1 Several examples from CEE to compare planned reforestation for 2003, 2010 and 2015, and actual implementation in 2003 ('actions' line) as a percentage of planned reforestation in 2003. *Source:* Slovak MoE (2005); Estonia MoE (2005); Czech Republic MoE (2005); Hungary MoE (2005)

than 50 years ago was forested but later was converted to another use (IBN-DLO 1999). In this paper no distinction is made between these terms.

Reforestation was impeded by institutional instability, ambiguous and insecure land tenure, and financial and organizational problems with the allocation of subsidies to land owners (Nijnik and Bizikova 2007). During the transition in Slovakia, for instance, when 42% of the area of state forests was given back to former owners and more than 90% of claims were processed, the incentives in support of reforestation were ineffective. Consequently, with cancellation of the state monopoly and of the state forestry framework, according to which the reforested land would have been 50,000 by 2000, the area actually reforested appeared to be just 877 ha. The analysis of reforestation in other CEE countries also reveals the gap between planned and actual forest planting, i.e. between forest policies and their practical realization. These patterns are probably caused by numerous forest holdings, but also by the problems with accountability of policy-making in transition countries (Pal 2005).

Sustainable forestry requires long-term commitments and a stable operational framework to deliver multiple economic, social and ecological benefits. Although the link between the size of forest holdings and the degree of sustainability over all of the forest area is not explicit, forest fragmentation and the increasing number of small-scale holdings may slow down implementation of sustainable forest management (MCPFE 2007). It is a precondition for SFM that forestland ownership and tenure rights are properly defined and assured. Otherwise, given the uncertainty of consolidation of fragmented land or insecure property rights to the asset in which the investment is made, forest users will tend to pursue their short-term objectives. They will likely prefer to receive gains from their forestland sooner rather than later and unsustainable forest practices may continue. Nijnik and Oskam (2004) argue that forest tenure and SFM are closely linked. Institutional advance, especially when

it concerns allocation and assurance of property rights, decentralisation and restructuring of governance, and the development of markets, is extremely important for SD of small-scale forestry in CEE.

Characterization of Small-Scale Forest Owners in Transition Countries of CEE

The structure of forest ownership differs widely between the nine countries (Sisak and Jarsky 2002). For example, in Slovakia the state owns about 40% of forest land, but manages more than 60%, leasing the balance from private owners. In contrast, most of the forest land in Ukraine is state-owned, but is managed by various users, including government agencies, cooperatives and local communities.

Family and community forest owners usually pursue multiple objectives of forestry development, for example through integration of timber production and biodiversity conservation. In Slovakia, Romania and the Czech Republic, small forest owners express their interest to go beyond timber production, to derive multiple benefits of forest and to target niche markets including eco-tourism and recreation, provision of clean drinking water, local energy production and protection of areas with important habitats, contributing therefore to sustainable regional development (Sisak and Jarsky 2002). Forest owners usually focus on timber production in the short term, while multiple benefits are among their long-term priorities (Borlea 1996).

Commonly, it is difficult to meet biodiversity conservation and multifunctional forestry aspirations due to small forest holdings and to aesthetic (e.g. spatial continuity of landscapes), nature conservation (e.g. eco-corridors and habitats) and recreation (e.g. accessibility) problems arising from fragmentation of rural landscapes. Moreover, the lack of experience in coping with private and public forests, and multiple stakeholder interests, reduces the potential for SFM in the context of competing priorities of various forest owners and users, particularly in the areas with an ageing rural population, at times with poverty and unemployment, utilizing seasonal and illegal labourers (Nijnik and Bizikova 2007).

Private SSF owners in CEE consider as their major problems to progress with long-term multifunctional forestry: lack of policies to encourage the desired actions; low level of capacity to develop sensible business plans for SFM practices; shortage of information to identify valuable habitats and the technologies for renewable energy production; and limited access to networks in order to exchange information, best practices and lessons learned in more advanced areas, in terms of promoting SFM (Lacko and Vinca 2002). The problem is often magnified because many forest owners have limited knowledge of forest management due to their lack of this experience prior to the transition. Nevertheless, their interest in SSF and SFM has increased since 2000 (World Bank 2003; Salka et al. 2006; Gaižutis 2007; Hirsch et al. 2007).

According to research by IUCN (2004), SSF owners in CEE are represented by three major groups of people:

1. Market-oriented forest owners who own relatively large estates and focus primarily on profit maximisation. Having a stable and long-term profit maximising perspective, these forest owners realise the importance of SFM. If their nature conservation activities affect profitability, they expect compensation.
2. Owners who manage their forests for household and farm needs (especially production of firewood and timber). The forest holdings are usually small, and their owners have neither sufficient production nor much interest in forestry as a business. These SSF owners cut trees selectively, and provided their needs are satisfied they accept nature conservation measures.
3. Owners whose connection to their property is weak. They often live away from their forest, and usually in cities. They do not gain profit from their property, or if they do, they tend to log the forest. However, in the majority of cases, representatives of this group appreciate landscape, and ecological and multifunctional roles of forests.

These three major and diverse groups of SSF owners in CEE have equally diverse interests and motivations, which are reflected in their attitudes towards forest and land tenure, forestry management practices, biodiversity conservation, and aesthetic and cultural landscape values. Forest owners also differ in emotional ties to their property which is often treated as a family asset (IUCN 2004). To define and explain existing perceptions of forestry policy actors concerning pro-market changes and SF, and to identify the potential areas of conflict between stakeholder interests, their attitudinal diversity has been assessed in more details in this study, by using the Q-methodology approach and taking Ukraine as an example.

Application of Q-methodology

The Q-method is a quantitative tool for examining human values and beliefs, the results of which are deemed to be systematic and scientifically rigorous (Brown 1996; Barry and Proops 1999). Its application and distinction from standard (R-analysis) are discussed in McKeown and Thomas (1988), Brown (1996) and Barry and Proops (1999). With relevance to forestry, Q-method was used to define attitudes to rural reform (Peritore and Peritore 1990), understand participant perspectives in national forest management (Steelman and Maguire 1999), measure attitudinal diversity of forest policy actors (Nijnik and Oskam 2004), examine public attitudes to woodland development in Scotland (Nijnik and Mather 2008) and evaluate landscape content and change across several countries in Europe (Nijnik et al. 2008).

The technique involves qualitative and quantitative research, starting from literature search and including the sequential application of discourse and concourse analysis and participatory methods, combined with quantitative tools, involving multiple regression and principal component analysis. The analysis results in typologies of views that prevail in a given situation, and allows identification of the groups of people based upon their opinions towards sets of statements. A few

examples of the statements employed in this research are:—‘A freedom of productive activity with market structural changes will enhance sustainable forest management’ and—‘If forest enterprises and land are privatised and the market is allowed to operate, the forest economy will improve’.

Van Asselt et al. (2001) distinguish five types of participants considering public evaluation of decisions: (1) government officials; (2) citizens; (3) interest groups such as NGOs; (4) businessmen; and (5) scientific experts. In this research, three forestry policy actors (namely foresters from state forest services, forest users from cooperatives and local communities, environmental NGOs and forest scientists) across forestry zones of Ukraine of differing gender, age, education and socio-economic background were interviewed.

The Q-method employs a small number of respondents because most of the data derives not from the number of participants, but from how much information is implicit in each participant’s Q-sort. Q-sorts are formal models of somebody’s understanding of the points of view at issue (Barry and Proops 1999). To receive individual Q-sorts the respondents were sent normal distribution Q-sort cards and statements, and to reduce the opinion items to a manageable number the statements were structured according to the Q-sample design presented in Table 4.

The Q-sample was composed of opinions matching the design combinations, and to expand the coverage of expressions, each of the four combinations was replicated six times for a final sample of 24 items (i.e. statements). The sampling procedure is discussed at length by McKeown and Thomas (1988). The economic, institutional and environmental dimensions that affect SSF were presented in the statements, and the participants were asked to rank each Q-statement according to their preferences. The answers were recorded on the scale +3 through to −3, for complete agreement through to complete disagreement, with zero indicating a neutral attitude to the statement.

The data received from the interviews were run through the Q-methodology software to apply the procedure described in Brown (1996). This resulted in typologies of views that prevail in a given situation concerning the issues in question reflected in statements. These typologies were differentiated according to the orientation of the blocks of statements and their ranking, as described in Nijnik and Oskam (2004). The resulting ‘factors’ represented the points of view (the beliefs or preferences people have), and through a discourse analysis that followed it was possible to explain why people had their beliefs. The analysis provided insights into

Table 4 Q-sample design on SSF transition to a market economy and sustainability

Main effects	Components	
A. Directions (N = 2)	(a) Pro-market economy	(b) Command-and-control system
B. Dimensions (N = 2)	(c) Sustainable development	(d) Low concern for SF
Combinations: (A) × (B) (N = 4)	a × c	b × c
	a × d	b × d
Replication number m = 6		
Q-sample size: N = (A) × (B) × (m) N = 2 × 2 × 6 = 24		

participants' preferences, examined important criteria of their perspectives and explained factors influencing diversity of public opinion, by analyzing both the responses to statements and socio-economic background of respondents.

Stakeholder Evaluation of Forestry Development: The Case of Ukraine

The Q-analysis indicates the existence of four groups of attitudes regarding market reforms and SF development (Nijnik and Oskam 2004). An example of factor loadings characterising the attitudinal diversity of policy actors (identified through the Q sorting procedure) across forestry zones in Ukraine is presented in Table 5.

In Table 5, an individual's loading on a factor (with X indicating a defining sort) is a correlation coefficient indicating the extent to which each of 15 Q-sorts (referred to across zones in the first column) is similar to (or how far it is from) the composite factor array. A positive loading on a factor indicates that an individual shares outlook with others on that factor (on issues under investigation as identified in statements) whilst a negative loading is a sign of rejection of the factor's perspective.

The *first attitudinal group* was found to have the belief that only radical changes towards a market economy will result in a breakthrough in the development of SSF. The respondents considered the market and forest tenure as important attributes of SD. The *second group* favoured a command-and-control economy orientation. The

Table 5 Factor loadings for attitudinal diversity of SSF stakeholders across forestry zones in Ukraine, found using the Q-method

Regional representation of individual Q-sorts research	Loadings across factors			
	1	2	3	4
1 Polissja (Woodlands)	0.6480X	0.1471	0.1470	−0.1341
2 Polissja (Woodlands)	0.8235X	0.1735	−0.1131	−0.3967
3 Polissja (Woodlands)	−0.5317	0.1552	−0.0324	0.6305X
4 Wooded Steppe	0.1498	0.8040X	−0.0318	0.2544
5 Wooded Steppe	0.8399X	−0.0683	−0.0308	−0.1953
6 Wooded Steppe	−0.0169	0.8225X	0.0962	−0.1423
7 Steppe	0.1171	0.2507	0.8564X	−0.1007
8 Steppe	−0.6697	−0.2044	0.2210	0.5239X
9 Steppe	0.4101	0.2974	−0.1134	−0.7524
10 Carpathians	−0.1453	−0.1527	0.7240X	0.3210
11 Carpathians	0.7462X	0.0399	−0.1155	−0.4758
12 Carpathians	−0.0482	0.4121	0.0821	0.8307X
13 Crimea	−0.5444	−0.1900	0.1356	0.6677X
14 Crimea	0.8580X	−0.0907	0.0998	0.0598
15 Crimea	−0.1656	0.4309	−0.4566	0.5950X
Percentage of variation explained	29	13	11	22

actors criticize radical economic reform and are in favour of administrative methods in governance. They support their opinion by citing the environmental and social problems that arose during the transitional period towards a market economy. Two other groups of opinion were observed. One supports market reforms but considers SFM issues not really important. The other is in favour of a command-and-control economy, but does not have a clear opinion about the sustainability dimensions pertaining to multifunctional forestry development.

The social perspective of this study, that focused on personal history of respondents rather than on their responses to statements shows that respondents in the 24–38 year age group are more in support of radical market changes. The respondents over 38 years of age care about sustainable development. This analysis does not distinguish differences between opinions of female and male respondents. Relatively wealthy stakeholders were found in this study to be more supportive of market changes and are concerned with the problems of SFM. Also, the respondents who have been involved in forestry for more than five years were found to be more satisfied with pro-market reforms and consider SFM important. This observed opinion indicates that knowledge and experience likely lead to a better understanding of the necessity of institutional transformation towards a market economy and SFM.

The investigation across zones provides some evidence that the respondents from the Polissja (woodlands) and the Carpathian regions (also densely wooded) support more radical economic reforms. The stress is further placed on sustainable development considerations pertaining to SSF. This could be explained by cultural ties between people and forest in these regions. The attitudes of the respondents from the Forest-Steppe, Steppe and Crimean zones reflect their preoccupation with the problems of nature conservation. Their perceptions could likely be explained by the important environmental and social roles of forestry in these localities. Overall, the attitudinal diversity of forestry stakeholders in Ukraine, as analysed in this research, is likely dependent on age and living conditions of the people and still more on their competencies.

Capability Development to Promote Sustainable Small Scale Forestry

The analysis indicates that there is not always a support of the forest policy reforms in transition countries (as in Ukraine), and that institutional transformation to a new state of the affairs may cause distortions in practical aspects of forestry, e.g. concerning reforestation programs (as in Slovakia) or the provision of multiple ecosystem services, particularly of biodiversity conservation. In nature protection areas, biodiversity conservation is usually performed by a separate function in society (specialization). In SSF, it is to be integrated into forest management schemes (Wolf and Primmer 2006). This type of multifunctionality places additional responsibilities on SSF management and requires a more diverse set of capabilities than management of one or few forest products (Kaljonen et al. 2007). Thus, economic and institutional transformation in CEE forestry, and its multifunctionality, necessitate the attitudinal and behavioural patterns of stakeholders to change and to adjust to new conditions.

Although the natural conditions and environmental situation vary considerably across CEE, most of the countries share similar patterns because of the legacy of transition. For instance, governance in CEE forestry primarily constitutes hierarchy (the authority of government), but local authorities and various organisations and end-users are becoming increasingly involved in forestry (Nijnik and Bizikova 2007). Stakeholders set up organizations and networks, distribute responsibilities and direct funds. Private owners join efforts to represent their rights in legislative power. In the process of making decisions, stakeholders interact, learn, adapt and evolve in the changing environment (Kaljonen et al. 2007). However, the analysis carried out in Slovakia, Czech Republic and Romania showed that SSF owners are lacking adequate capabilities to explore innovative approaches which were initially developed for state-owned holdings and are now to be redesigned for smaller private ones (Sisak and Jarsky 2002; Salka et al. 2006).

Among other problems that impede sustainable development of SSF is the lack of communication and reciprocity between stakeholders and a lack of their motivation, commitment and trust. According to Shleifer and Vishny (1998), trust (the percentage of people answered ‘yes’ when asked ‘would you say that most people can be trusted?’) in the countries of Western Europe is on average between 45 and 65% compared to not more than 30% in CEE. Difficulties in the development of trust, in learning and dissemination of best practices, arise due to: differences in levels of knowledge, experience and available facilities; lack of co-operation between stakeholders; shortage of resources (material, financial or human); and high transaction costs. Capability development and linking the SSF priorities to those of rural developments at the levels of planning, implementation and monitoring are crucial for a more effective involvement of smallholding owners in SFM.

For the above reasons, it is essential, together with the development of educational schemes, to enhance communication and understanding between high-level policy- and decision-makers in forestry and forest owners, users and local communities, as well as to promote ‘horizontal’ communication, to facilitate integration of the diverse stakeholder interests with the principles of SFM, and to build public-private partnerships. An increased involvement of end-users in decision-making and policy implementation will amplify the responsibility of actors involved in vertical and horizontal co-operation and will develop their capabilities to put SSF in CEE on a sustainable path. To achieve this it is necessary that public values and beliefs—the motivation of stakeholder groups to handle the nature in a particular way—are taken into account, especially when mobilisation capability is restrained by the institutional inheritance of a particular governance model (Kaljonen et al. 2007), as is the case in the transition countries of CEE.

Conclusions

The transition in forest ownership is a distinctive feature of small-scale forestry development in CEE. However, this development faces challenges, for example because the structure of private forest ownership on many occasions is not favourable for SFM (Niskanen et al. 2007). The results of attitudinal analysis

suggest that opinions differ between stakeholder groups about transition to a market economy and of its effects on SFM. There are, therefore, differing levels of support of institutional changes and differing levels of stakeholder involvement in implementation of the policy reforms. Problems of consolidating fragmented land ownerships, and a lack of knowledge and experience in SFM and in multifunctional forest use are also observed in CEE. Some essential steps required for successful transformation of SSF to a new level of maturity include:

- diversification of national forestry inventories;
- linking ecological indicators of forests to forest ownership and management frameworks;
- evaluation of multiple SSF products (e.g. grazing), benefits (biodiversity) and functions (soil protective and recreational), and introduction of market incentives for the provision of multiple ecosystem services;
- development of knowledge about SSF stakeholders and their priorities and challenges;
- dissemination of best practices to be applied by SSF owners and users;
- resolution of possible conflicts and the development of co-operation and trust between stakeholders; and
- addressing challenges posed by global changes (particularly climate change and globalisation), and of transitional problems in the course of pro-market reformation and EU accession.

Although the transition process and the delivery mechanisms on sustainable SSF differ from one country to another, there are many similar evolutions and common trends across the analysed countries. These concern policy-making in terms of finding solutions to pressing problems, and setting-up institutional arrangements and developing capabilities that generate trust and co-operation among mutually interdependent SSF policy actors. A broader stakeholder participation in SSF decision-making will provide a more complete representation of the diverse interests and concerns that belong to various parties. To find the way to take into account all major interests, to increase stakeholder networking, to arrive at mutual understanding, to overcome disagreement, to resolve potential conflicts and reduce mistrust, is essential for sustainable development of SSF in CEE.

The need for cross-sectoral co-operation and participative planning and management of forest resources arises largely from the necessity to deal simultaneously with multiple SSF objectives and multiple SSF frameworks. This type of diverse human-environment interactions requires innovation, learning and capability development. Given multifunctionality of SSF and in the light of participatory governance, the deliberating context of flexible policy measures, instruments and implementation tools needs to be given special attention.

The decisive factors for implementation of SF policy design are: reconciliation of SSF development with economic, environmental and social dimensions of countries in transition; flexibility of the forest management plans to incorporate additional decisions or involve more or different actors, under changing conditions; horizontal tuning of the management plans through their correlation with other nature and resource management plans, including those of nature conservation; vertical tuning

of the plans when executive structure has to respond to the policy structure; feasibility of the policy concerning SSF targets and implementation resources; task orientation, with clear definition and allocation of responsibilities within forestry actors involved in practical application of the decisions; acceptability of the policy and management decisions on SSF by the public; and stakeholder involvement in decision-making. The deliberative processes in SSF at a local level and ‘learning by doing’, together with the integration of scientific and traditional knowledge, will assist in meeting SFM targets and sustaining rural livelihoods.

Acknowledgements The support of the Environment and Rural Affairs Department of the Scottish Government for this research at the Macaulay Institute is gratefully acknowledged. We also thank EU 6th Framework Programme for support from the project ‘Multilevel Governance of Natural Resources: Tools and Processes for Water and Biodiversity Governance in Europe’.

Appendix A: Major Recent Regulations Related to Forestry in the Selected Countries

Recent Forest Regulations in the Czech Republic

Restoration of rights in property and use to woodlands—law no. 229/1991 *Act on Forests* (1993)

The framework of legislation governing forestry is set out in the *Act on Forests* and on some *Law Amendments* no. 289/1995 (Forestry Act) declaring SFM

Ministry of Agriculture adopts law no. 82/1996 on *Genetic classification, reforestation and record-keeping in manipulation with tree species seeds and transplants*.

Act no. 114/2000 regulated a *Transfer of state-owned real estates into communal ownership* (including also 40,000 ha of forest land).

The new *Game Management Act* no. 449/2001 came into force on 1 July 2002.

In the course of 2002, the *Forest Act* was amended by the law no. 76/2002 on *integrated prevention and reduction of pollution*.

In connection with the public administration reform, law no. 320/2002 *reallocates of the competencies to regional authorities and communities with extended competency*.

A new Act 149/2003, on *Trade in Reproductive Material of Forest Tree Species* reflecting EC regulation 105/1999, has been adopted. Some amendments to the Act no. 289/1996 on Forests were adopted too.

Recent Forest Regulations in Slovakia

The Act on *Regulation of Ownership Rights to Land and other Agricultural Assets*, Land Regulation Act no 229/1991, governs issues relating to forest land.

Act on Forests (1993) building on sustainable forest management. It was intended for the transition period 1993–96 but is still in force though currently being revised.

The Municipal Assets Act (Act no 306/1992) governs the restitution of ownership title to the municipalities. These rights were nationalized in 1949. *The Act on Restitutions for Churches and Religious Societies* governs the restitution of assets (Act no 282/1993).

The Act on Measures to Regulate the Ownership Rights to Land (Act 180/1995) and *the Act on Land Associations* (Act no 181/1995) have brought about improvement and acceleration of the forest land restitution process.

Slovak MoA Regulation no. 453/2006 on *Forest Management Planning and Forest Protection*. The *Programme for Forest Development* of the Slovak Republic identifies the main issues in forest development and the main tasks for the period to 2010. The tasks become obligatory for the ministry and for the stakeholders.

Forest Act no. 326/2005/*The Programme for Forest Development of the Slovak Republic*.

Act no. 595/2006 amending Act no 92/1991 lays down detailed rules for the *Transfer of state property to other organizations*, also amending Act no. 229/1991.

References

- Barry J, Proops J (1999) Seeking sustainability discourses with Q methodology. *Ecol Econ* 28(3):337–345. doi:[10.1016/S0921-8009\(98\)00053-6](https://doi.org/10.1016/S0921-8009(98)00053-6)
- Benhnham A, Bingham L, Merithew M (1995) Institutional reform in Central and Eastern Europe: altering paths with incentives and information. Research Report, International Centre for Economic Growth, Washington University, St. Louis
- Berkes F, Colding J, Folke C (2003) Navigating social-ecological systems: building resilience for complexity and change. Cambridge University Press, Cambridge
- Bizikova L, Tubiello F (2007) Opportunities for land-based carbon sequestration in Slovakia. International Institute for Applied System Analyses, Vienna. Interim report, IR-07-028
- Borlea GF (1996) Forestry extension in Romania. Country paper. Food and Agriculture Organization of the United Nations, Rome
- Brown S (1996) Q methodology and qualitative research. *J Qual Health Res* 6(4):561–567. doi:[10.1177/104973239600600408](https://doi.org/10.1177/104973239600600408)
- Czech Republic MoE (Ministry of the Environment of the Czech Republic) (2005) Fourth national communication on the UN framework convention on climate change and demonstrable progress. Report on implementation of the Kyoto protocol, Prague
- Drgonal V, Turnock (2000) Policies for rural Eastern Europe in transition: the case of Slovakia. *GeoJournal* 50(2–3):235–247. doi:[10.1023/A:1007149431025](https://doi.org/10.1023/A:1007149431025)
- Estonia MoE (Ministry of the Environment of Estonia) (2005) Forth national communication under the UN framework convention on climate change, Tallinn
- European Commission (1999) Council Regulation (EC) No 1257/1999 of 17 May 1999 on support for rural development from the European Agricultural Guidance and Guarantee Fund (EAGGF), Brussels
- Gaižutis A (2007) Gaining a position for Lithuanian small-scale forestry through creation of a marketing network for wood trade and services. *Small-scale For* 228(58):48–53
- Hirsch F, Korotkov A, Wilmhammer M (2007) Private forest ownership in Europe. *Small-scale For* 228(58):23–26
- Hungary MoE (Ministry of Environment and Water of Hungary) (2005) Fourth National communication of the Republic of Hungary on climate change, Budapest
- IBN-DLO (1999) Resolving issues on terrestrial biospheric sinks in the Kyoto protocol, Dutch national research programme on global air pollution and climate change, Wageningen
- IUCN (2004) Communicating biodiversity conservation for forest owners in CEE. IUCN programme office for Central Europe. Warsaw. <http://www.iucn-ce.org/documents/forest/> as accessed on 15 August 2008

- Kaljonen M, Primmer E, De Blust G, Nijnik M, Kulvik M (2007) Multifunctionality and biodiversity conservation—institutional challenges. In: Chmelievski T (ed) *Nature conservation management: from idea to practical issues*. PWZN “Print 6”, Lublin-Lodz-Helsinki-Aarhus, pp 53–69
- Kouplevatskaya-Yunusova I, Buttoud G (2007) Assessment of an iterative process: the double spiral of re-designing participation. *For Policy Econ* 8(5):529–541. doi:[10.1016/j.forpol.2005.07.010](https://doi.org/10.1016/j.forpol.2005.07.010)
- Lacko M, Vinca R (2002) Innovation and entrepreneurship in Slovakian forestry. Final report on results of forest holdings and institutional system surveys. Forest Research Institute, Zvolen, Slovakia
- Lessard G (1998) An adaptive approach to planning and decision-making. *Landsc Urban Plan* 40(1–3):81–87. doi:[10.1016/S0169-2046\(97\)00100-X](https://doi.org/10.1016/S0169-2046(97)00100-X)
- Marghescu T, Anderson J (1997) Issues and opportunities in the evolution of private forestry and forestry extension in several countries with economies in transition in Central and Eastern Europe. FAO, Rome
- McKeown B, Thomas D (1988) *Q-methodology: quantitative applications in the social sciences*. Sage, Beverly Hills, CA
- MCPFE (2007) State of Europe’s forests, 2007. The MCPFE report on sustainable forest management in Europe, Warsaw
- Nijnik M, Bizikova L (2007) The European Union sustainable forest management and climate change mitigation policies from a transition countries perspective. In: Reynolds K (ed) *Sustainable forestry: from monitoring and modelling to knowledge management and policy science*. CABI, Oxfordshire and Cambridge, pp 56–73
- Nijnik M, Mather A (2008) Analysing public preferences for woodland development in rural landscapes in Scotland. *Landsc Urban Plan* 86(3–4):267–275. doi:[10.1016/j.landurbplan.2008.03.007](https://doi.org/10.1016/j.landurbplan.2008.03.007)
- Nijnik M, Oskam A (2004) Governance in Ukrainian forestry: trends, impacts and remedies. *Int J Agric Res Govern Ecol* 3(1):116–133
- Nijnik M, Zahvoyska L, Nijnik A, Ode A (2008) Public evaluation of landscape content and change. *Land Use Policy* 26(1):77–86. doi:[10.1016/j.landusepol.2008.03.001](https://doi.org/10.1016/j.landusepol.2008.03.001)
- Niskanen A, Pettenella D, Slee B (2007) Barriers and opportunities for the development of small-scale forest enterprises in Europe. *Small-scale For* 6(4):331–345. doi:[10.1007/s11842-007-9035-x](https://doi.org/10.1007/s11842-007-9035-x)
- Pal LA (2005) *Beyond policy analysis: public issue management in turbulent times*, 3rd edn. Thomson Nelson, Toronto
- Peritore N, Peritore A (1990) Brazilian attitudes toward agrarian reform: a Q-methodology opinion study of a conflictual issue. *J Dev Areas* 24(3):377–405
- Salka J, Longauer R, Lacko M (2006) The effects of property transformation on forestry entrepreneurship and innovation in the context of Slovakia. *For Policy Econ* 8(7):716–724. doi:[10.1016/j.forpol.2005.06.017](https://doi.org/10.1016/j.forpol.2005.06.017)
- Scott W (1995) *Institutions and organisations*. Sage, Thousand Oaks, CA
- Shleifer A, Vishny R (1998) *The grabbing hand: government pathologies and their cures*. Harvard University Press, Cambridge, Massachusetts
- Sisak L, Jarsky V (2002) Actual innovation and entrepreneurship behaviour in forestry in the Czech Republic. Report on results of forest holdings. Department of Forestry Economics and Management, Faculty of Forestry, Czech University of Agriculture, Prague
- Slovak MoA (Ministry of Agriculture of Slovak Republic) (2004) Green report. Forestry, Bratislava
- Slovak MoE (Ministry of Environment of Slovakia) (2005). Fourth national communication to the conference of the parties to the UN framework Convention on climate change, Bratislava
- Steelman T, Maguire L (1999) Understanding participant perspectives: Q-methodology in national forest management. *J Policy Anal Manage* 18(3):361–388. doi:[10.1002/\(SICI\)1520-6688\(199922\)18:3<361::AID-PAM3>3.0.CO;2-K](https://doi.org/10.1002/(SICI)1520-6688(199922)18:3<361::AID-PAM3>3.0.CO;2-K)
- Van Asselt MBA, Mellors J, Rijkens-Klomp N, Greeuw SCH, Molendijk KGP, Beers PJ, van Notten P (2001) Building blocks for participation in integrated assessment: a review of participatory methods. International Centre for Integrated Studies (ICIS), Maastricht
- Wolf S, Primmer E (2006) Between incentives and action: a pilot study of biodiversity conservation competencies for multifunctional forest management in Finland. *Soc Nat Resour* 19(4):1–17
- World Bank (2003) Key Challenges of the Russian Forest policy Reform. World Bank Discussion Paper. In: *Institutional Changes in Forest Management. Experience of Countries with Transition Economies: Problems and Solutions*. World Bank/PROFOR, Washington, pp 20